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EXAMINER

JONES, PRENELL P

ART UNIT

PAPER NUMBER

2667

DATE MAILED: 10/31/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# SUPPLEMENTAL

## Office Action Summary

**Application No.**

09/518,034

**Applicant(s)**

FURUKAWA ET AL.

**Examiner**

Prenell P Jones

**Art Unit**

2667

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-41 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-23 and 26-41 is/are rejected.
- 7) ☒ Claim(s) 24 and 25 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5.
- 4) ☒ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1 and 26 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Applicant claims, "meeting the shortage of combined codes", which is not described in the specification.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

***Claim 1*** recites the limitation "meeting the shortage" in line 12; ***claims 11, 12, 13***, recites the limitation "the other mobile station" in lines 3-4; ***claim 30*** recites the limitation "the other code", in line 17 and "meeting the shortage" in line 18. There is insufficient antecedent basis for this limitation in the claim. Claims 31-41 depend on 30, therefore, 31-41 are rejected as well.

Claims 6, 7 and 10 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Regarding claim 6 and 7, Applicant is claiming on page 21, line 19 "***use-frequency***" which is unclear to Examiner as to what Applicant is claiming; regarding claim

10, 21 and 23, Applicant is claiming on page 22, line 10, and page 23, line 29 "*commonly used* control signal" which is unclear to Examine as to what Applicant is claiming.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 2, 4, 5, 8-10, 14 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukumasa et al in view of Leem.

Regarding claim 2, 4, 5 and 14, Fukumasa discloses (Abstract, Fig. 1, 3a & 3b, col. 2, line 30-67, col. 8, line 9 -67, col. 9, line 1 thru col. 10, line 35, col. 12, line 1-40) a spread spectrum communication system, wherein the communication between a base station and mobile stations

which includes the process of combining two code structure by an m-sequence whereby multiplying of two codes generates a third sequence (set) of codes, set of code expression, (col. 17, line 1 thru col. 18, line 67, col. 23, line 20 thru col. 24, line 63) code allocation associated with a tree-structured occurs after code processing, (col. 12, line 1-40) base station indicates to mobile of assignment modification. However, Fukumasa is silent on combined codes arranged in priority order. In analogous art, Leem (Abstract, Fig. 4, Table 1, col. 4, line 37 thru col. 5, line 62) discloses a mobile communication system that stores information (codes) in memory wherein the stored codes are assigned priority with respect to the measured power level values, mobile searches codes according to priorities. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have been motivated to implement assigning priority to combined codes as taught by Leem with the teachings of Fukumasa for the purpose of decreasing handoff delay in a spread spectrum mobile communication system and to assist the mobile in searching for codes.

Regarding claims 8-10, as indicated above, Leem discloses (Abstract, Table 1, Fig. 4, col. 4, line 37 thru col. 5, line 62) discloses a mobile communication system that stores information (codes) in memory wherein the stored codes are assigned priority with respect to the measured power level values, mobile searches codes according to priorities, he further disclose (col. 6, line 1-18) the higher priority is assigned to the last code registered

Regarding claim 15, as indicated above, Fukumasa discloses (Abstract, Fig. 1, 3a & 3b, col. 2, line 30-67, col. 8, line 9 -67, col. 9, line 1 thru col. 10, line 35, col. 12, line 1-40) a spread

spectrum communication system, wherein the communication between a base station and mobile stations which includes the process of combining two code structure by an m-sequence whereby multiplying of two codes generates a third sequence (set) of codes, set of code expression, (col. 17, line 1 thru col. 18, line 67, col. 23, line 20 thru col. 24, line 63) code allocation associated with a tree-structured occurs after code processing, (col. 12, line 1-40) base station indicates to mobile of assignment modification. In addition, it is inherent that an allocation method is determined based on quantity of service.

Regarding claim 27, as indicated above, Fukumasa discloses (Abstract, Fig. 1, 3a & 3b, col. 2, line 30-67, col. 8, line 9 -67, col. 9, line 1 thru col. 10, line 35, col. 12, line 1-40) a spread spectrum communication system, wherein the communication between a base station and mobile stations which includes the process of combining two code structure by an m-sequence whereby multiplying of two codes generates a third sequence (set) of codes, set of code expression, (col. 17, line 1 thru col. 18, line 67, col. 23, line 20 thru col. 24, line 63) code allocation associated with a tree-structured occurs after code processing, (col. 12, line 1-40) base station indicates to mobile of assignment modification. In addition, it is inherent that an allocation method is determined based on quantity of service. He further discloses (col. 5, line 51 thru col. 7, line 67, col. 12, line 1-67) first and second codes wherein second code is different from first code, and the implementation of orthogonal Gold codes.

Claims 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukumasa et al in view of Leem as applied to claims 2, 4, 5 and 14 above, and further in view of Kato et al.

Regarding claims 16-18, as indicated above, Fukumasa discloses (Abstract, Fig. 1, 3a & 3b, col. 2, line 30-67, col. 8, line 9 -67, col. 9, line 1 thru col. 10, line 35, col. 12, line 1-40) a spread spectrum communication system, wherein the communication between a base station and mobile stations which includes the process of combining two code structure by an m-sequence whereby multiplying of two codes generates a third sequence (set) of codes, set of code expression, (col. 17, line 1 thru col. 18, line 67, col. 23, line 20 thru col. 24, line 63) code allocation associated with a tree-structured occurs after code processing, (col. 12, line 1-40) base station indicates to mobile of assignment modification, and Leem (Abstract, Fig. 4, Table 1, col. 4, line 37 thru col. 5, line 62) discloses a mobile communication system that stores information (codes) in memory wherein the stored codes are assigned priority with respect to the measured power level values, mobile searches codes according to priorities. Both Fukumasa and Leem are silent on service request including transmission error rate and speed. In analogous art, Kato discloses (Abstract, col. 2, line 20-67, col. 3, line 28-67, col. 12, line 18 thru col. 13, line 45) transmitting (allocate) and receiving code in a wireless spread spectrum environment wherein there exist processing of, sequence codes, first/second codes and combining, code assignments, transmission error rates/speed and power levels are associated with service request from user device (mobile station). Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to have been motivated to implement associating user request with transmission speed and error rate with the combined teachings of Fukumasa and Leem for the purpose of amplifying the processing efficiency of the system overall.

Claims 19-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukumasa et al in view of Leem as applied to claims 2, 4, 5 and 14 above, and further in view of Anderson et al.

Regarding claims 19-23, as indicated above, Fukumasa discloses (Abstract, Fig. 1, 3a & 3b, col. 2, line 30-67, col. 8, line 9 -67, col. 9, line 1 thru col. 10, line 35, col. 12, line 1-40) a spread spectrum communication system, wherein the communication between a base station and mobile stations which includes the process of combining two code structure by an m-sequence whereby multiplying of two codes generates a third sequence (set) of codes, set of code expression, (col. 17, line 1 thru col. 18, line 67, col. 23, line 20 thru col. 24, line 63) code allocation associated with a tree-structured occurs after code processing, (col. 12, line 1-40) base station indicates to mobile of assignment modification, and Leem (Abstract, Fig. 4, Table 1, col. 4, line 37 thru col. 5, line 62) discloses a mobile communication system that stores information (codes) in memory wherein the stored codes are assigned priority with respect to the measured power level values, control signals, mobile searches codes according to priorities. Both Fukumasa and Leem are silent on assigning codes to mobiles on the basis of transmission qualities measured by mobile. In analogous art, Anderson discloses (Abstract, col. 1, line 1 thru col. 2, line 67, col. 7, line 5-67, col. 8, line 29 thru col. 11, line 43) allocation associated with a mobile system that includes transmission quality, whereby, the transmission quality such as signal-to-noise ratio associated with interference is measured by the mobile station along with power levels. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to be motivated to implement a mobile station measuring transmission qualities associated with



allocation/assignment with the combined teachings of Fukumasa and Leem for the purpose of improving the communication within the system. For instance, it is well known in the art associating any wireless allocation process consist of evaluating sign-to-noise in association with the power levels for the purpose of eliminating/avoiding as much interference as possible, thereby as indicated earlier, improving the communication within the system.

*Allowable Subject Matter*

Claims 24 and 25 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Regarding claims 24 and 25, the limitation "code allocation is executed when a set of transmission signals from the base station is changed" is absent from the art.

Claim 30 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action. Regarding claim 30, although the cited prior art, Fukumasa et al, Leem, teach spread spectrum mobile system that allocates codes after code processing which consist of combining codes to produce additional codes, they fail to teach/suggest multiple ("k") spread adder units and an adder for adding spread spectrum signals from multiple ("k") adder units.

Claims 31-41 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims

Claim 3 is allowed over prior art.

The following is a statement of reasons for the indication of allowable subject matter:

Although the cited prior art, Fukumasa et al, Leem, teach spread spectrum mobile system that allocates codes after code processing which consist of combining codes to produce additional codes, they fail to teach/suggest  $M$  (sets of combined codes) as being defined as  $(INT(N/S)+1)$ , where  $N$  is the total number of codes used for used by all mobile stations connected with a base station and  $S$  is the total number of orthogonal codes.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Prenell P. Jones whose telephone number is 703-305-0630. The examiner can normally be reached on Monday thru Friday from 9:00-5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi Pham can be reached on 703-305-4378. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

Prenell Jones

October 30, 2003



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10/30/03